



## 122. Teaching Forensic Science in Elementary School

**Jessica Caton Diefenbach:** [00:00:00] We always start with the scientific method, because the basis of science is the scientific method, and every one of our experiments kind of focuses on that.

**Annalies Corbin:** [00:00:12] Welcome to Learning Unboxed, a conversation about teaching, learning, and the future of work. This is Annalies Corbin, Chief Goddess of the PAST Foundation and your host. We hear frequently that the global education system is broken. In fact, we spend billions of dollars trying to fix something that's actually not broken at all, but rather irrelevant. It's obsolete. A hundred years ago, it functioned fine. So, let's talk about how we reimagine, rethink, and redesign our educational system.

**Annalies Corbin:** [00:00:47] So, today on Learning Unboxed, we're going to have a fun conversation about amazing science programs that are happening in and around our community. We're continuing that conversation, and as the new academic year gets ready to start, we get to have a special treat today to talk about a program called WOW Programs at OSU. We're going to learn all about that here in just a second, but as always, I'm super excited for the conversation. And joining us today, I have three wonderful guests from the Ohio State University. Leading our conversation today is Jessica Caton Diefenbach, who is the WOW Program Coordinator for the last five years at the Ohio State University. So, Jessica, welcome to the program.

**Jessica Caton Diefenbach:** [00:01:33] Hi. Thank you for having me.

**Annalies Corbin:** [00:01:34] And joining Jessica are two Ohio State students, third year students, or juniors, depending on how you want to think about that, who have been participating in the WOW Program for a number of years, and actually most recently have been involved in the design and development of some new programming. And so, I'm hoping that we're going to get to talk about that a little bit today. So, joining Jessica, we have Brianna Agomessou, and Grace Benecke, both from the Ohio State University. So, Brianna and Grace, welcome to the program.

**Grace Benecke:** [00:02:02] Thank you.

**Annalies Corbin:** [00:02:03] So, I want to leap right in, very, very high level, Jessica, help our listeners who come to us from all over the world understand what exactly, first and foremost, what is the WOW Program? What's its background and sort of history, that 100,000-foot view as we get into the weeds here in a little while?

**Jessica Caton Diefenbach:** [00:02:24] Yeah, sounds great. So, the WOW Program, which stands for Wonders of Our World, is a science outreach program at the Ohio State University, which brings creative, hands-on science experiments to elementary school classrooms, grades K through five. The program is founded by Dean, Dr. Susan Olesik, in 1999. She currently also works here at Ohio State as the Dean in Natural Resources. And actually, I think it's Natural Sciences. I'm sorry, Natural Sciences and Mathematics.

**Annalies Corbin:** [00:02:55] It's a big institution, and it's always moving, and changing, and relabeling, and renaming, so out of full fairness to you.

**Jessica Caton Diefenbach:** [00:03:02] Exactly. Yeah. She used to be the chair of the chemistry department as well. And so, she started the program back when her daughter was in elementary school, kind of seeing a need to focus on science outreach and getting scientists into the classroom. So, today, the WOW Program works specifically with Columbus City Schools. We adopt three schools each for three years. And in the three-year period, we cover a variety of science topics, anywhere from biology, chemistry, physics, we're going to talk a little bit about forensic science, so everything in between.

**Jessica Caton Diefenbach:** [00:03:39] We adopt the school and we work with all the teachers there, so about 46 teachers from the schools and about 1,000 elementary school students a year. But it's a collaborative program, so not only do we work with Ohio State science and engineering undergraduates that are in either the Choose Ohio First program, the STEM Exploration and Engagement Scholars program, or just volunteers who are interested in our program. We also work with Battelle and CAS, which is a shared partner that we have with the PAST Foundation.

**Annalies Corbin:** [00:04:12] Yeah. All of those are shared partners, so wonderful contacts there. Yes. Thank you very much, Jessica. So, I think a couple of things that you touched on that I think are super, super important. So, one of the first ones is that there is largely, at least in the US, and it doesn't apply strictly to every place in the US. So, this is an over-generalization, but I think it's a fair assessment that because we don't test in the United States for competency in sciences, of any description in the elementary school, and very little, quite frankly, in middle school, we don't necessarily even put a lot of emphasis on it in some places in high school, depending on the state that you're in.

**Annalies Corbin:** [00:04:53] So, that means that by the time we have students show up in post-secondary, we cannot, as university faculty or as post-secondary educators, actually ensure that our students have the foundational needs in science that have been met, right? And so, that was part of the genesis of this program, is to ensure that the earliest stages we can get science, appropriate science, really rigorous science and not just the fun activities, but the deep thinking around science, into the hands of elementary students.

**Annalies Corbin:** [00:05:25] So, Brianna, I'm going to turn kind of to you, because when I looked at the bio information that you sent over, I was thrilled to see, for starters, that you have an interest in forensic science. And forensic science, it's a tough, complicated, very integrated and intricate field in many, many ways. And it's often one of those things that has got the cool wow factor. We have a forensic science program here at PAST that we started in 2009, I think it is.

**Annalies Corbin:** [00:05:53] And it's been incredibly popular, but it's also a program that teachers are terrified of, right? Because it seems so complex, and yet kids are interested, because they see it everywhere on television. So, Brianna, so share with us a little bit about why your passion for forensic science and how that meets up with WOW. I want to ask you really quickly about your involvement in WOW and sort of the passion place for what you do or what you aspired to do and how that translates for you.

**Brianna Agomessou:** [00:06:23] Okay. So, actually, I'll just start off with a little bit of the bio about me, so everyone else can understand. So, I'm majoring in criminology with a minor in ASL, American sign language and a minor in forensic anthropology. So, that translates, so I've been working with WOW for about two, going on three years now, and I was super excited when we decided we were going to do a forensic science unit, because we've done other units that I've loved, but I definitely was very excited for this one, because it was right up my alley.

**Brianna Agomessou:** [00:06:52] So, I was able to give my input about correct terminology and different things like that, and help give context to certain topics. I definitely, mainly worked with the interviews and creating like the storyline more for it so that we have correct words being used. And I made it where the kids would be able to fully understand what was going on. And then, towards the end of the unit development, I was able to create a card-like version of the unit that allowed it to be more game-like so that it wasn't super, oh, we're reading a lot, it was more fun and games.

**Annalies Corbin:** [00:07:27] Yeah. And that's wonderful, because what we know is engaging kids is one of the most powerful things that we've been able to do. So, that's really exciting as well. And so, Grace, I want to circle back around then sort of with the follow-up with this with you, because your background, you're studying chemistry, which is completely sort of integrated across all of this and

the work that happens, and you were also involved in the creation of new lesson opportunities. And that's not something, quite frankly, that happens very often to an undergrad student in a random department in the university, finds themselves in a program where you actually get to help co-design something new. So, talk with us a little bit about that and that experience.

**Grace Benecke:** [00:08:21] Yeah. So, developing this forensic science unit was part of my capstone project for my STEM Engagement and Exploration Scholars program. I wanted to work with WOW just because I loved the program my freshman year. And even though we did it online, this was still such an amazing opportunity. Jessica and I talked a little bit about backwards design before we even started talking about the unit, which was very interesting. It's not something I knew about just because I'm a chemistry major and that's a little bit more on the education side. But it talked about how you want to start with your ideas, and then like build from the ground up. And it was so fun to see it all come together at the end, just starting with very bare bones, and then everybody working together to make the unit.

**Annalies Corbin:** [00:09:05] Right. Absolutely. So, Jessica, share with us just a little bit. So, help us sort of set the stage for what Grace and Brianna have been talking about working in terms of thinking about the creation of these new units? So, from a WOW perspective, how do you make decisions around sort of them when do you work on new content as opposed to delivering the wonderful and amazing content that you've been able to do over the years? So, help us sort of understand the why? Why do this unit and why do this unit now?

**Jessica Caton Diefenbach:** [00:09:40] Yeah. So, honestly, every year that I've been helping out, I always try to introduce one new unit in either something that maybe aligns with my interest or maybe a unit that seems to be aligned with the teacher need or the school need. So, the WOW Program has about 10 to 15 units that we repeat once every three years to just make sure we're focusing on a variety of science topics for the schools.

**Jessica Caton Diefenbach:** [00:10:12] But in the past few years, we did an ecology unit, was our new one, then we did a bird unit. And then, because we were doing things virtually, we felt like this was a really good year to do kind of an unusual program. So, the forensic science unit really incorporates not only just one topic, it's several different science disciplines. And I think that's where we had the flexibility to do that, doing a remote learning and not having the programs be so back to back, because there's not a lot of time to kind of plan for the programs.

**Jessica Caton Diefenbach:** [00:10:51] We usually have new units developed kind of in the summer so that it can be implemented a few months later. So, for this one, it was just great to have. We had about 16 OSU students that were helping out in different teams. We had experiment development team. We had a video script-writing team, so they got to write the scripts for the video production

team. We recorded via Zoom, so it was video instructions for the teachers, and the students, and then a video editing team, which we're still kind of in the process of editing the videos to then finalize them, and then give them to the teachers.

**Jessica Caton Diefenbach:** [00:11:30] But we just felt it just seemed like a good time to focus on forensics chemistry, forensics biology, interviews, and kind of more a little bit of an anthropology side as well. So, it worked out pretty well, and I've worked in the past with another STEM EE student to actually get a new unit developed. So, when Grace was interested in doing the capstone project back in summer 2020, it seemed like a great time to introduce the new unit.

**Jessica Caton Diefenbach:** [00:12:01] And one other thing about the forensic science unit that you actually touched on, Annalies, is it's a complex topic that isn't focused on a lot. Any time you're looking through like lesson plans, it seems to be very middle school and high school-focused. So, we were trying to make it basic enough so that they could learn about forensics, but also enjoy and maybe be more interested in it later on.

**Annalies Corbin:** [00:12:31] Forensic science, it's a fabulous topic. And as I alluded to earlier, PAST has had a forensics program for a number of years. And in fact, one year, we had a school district, a rural school district in another state that made the decision that they wanted to do a big sort of epic, and it was epic, sort of launch event at the start of a new school year, where they were the entire school district, just a tiny little town, right?

**Annalies Corbin:** [00:13:02] So, you can easily have a sort of K-12 experience in a little town like that, and they had us come in, and we took over the school for an entire week. They worked with the teachers and we ran a forensic science program for an entire week. That's all the school did and we did it K-12. And it is, because it lends itself to so many different things, and the little kids in the elementary school are doing one piece of it, and middle school's doing something a little bit different, in high school, something yet again, right?

**Annalies Corbin:** [00:13:28] And forensic science is great, because you can scaffold it in so many ways. But that said, part of the tough part is how you make the decisions around what is appropriate and when at those various grade levels. So, Brianna, I want to ask you a little bit, just with your forensic lens and recognizing sort of you thinking about it with that approach, what was the hardest part of taking and distilling this really complex field down into helping the rest of the team be effective? So, how do you decide what pieces are good and elementary?

**Brianna Agomessou:** [00:14:08] So, that definitely was one of our biggest challenges, is making sure we're using the correct words. So, for instance, instead of using like criminal, we would say suspect, because we didn't want any of the kids to be like, well, I don't want to be a criminal, I don't

want to be a bad guy. So, there was a lot of things that we had to make sure that we were watching how we were wording it. Also, a big thing in forensic science when you do things in schools, especially in high schools, they're like, oh, there was blood on the crime scene. We didn't want to include any of that, because the little kids don't need to have to experience that.

**Annalies Corbin:** [00:14:40] No trauma, right? No trauma.

**Brianna Agomessou:** [00:14:42] Exactly. We're here for fun and education, not traumatizing the kids. So, we definitely had to make something that was easier. So, like fingerprint, smudges, things like that, not blood, because that's what a lot of people think when they think forensic science, is blood and murder, things like that. And we made it fun, took someone's Buckeye, something like that. So, that was definitely the biggest thing that was kind of like tricky, is making sure it was very kid-friendly, but not boring at the same time. And it was still something very interesting.

**Annalies Corbin:** [00:15:13] Yeah, awesome. And that is exactly what I was trying to get at. I mean, you've got to make some pretty intriguing sort of decisions. And the flip side of that, Grace, this was your capstone project work. And so, I'm really, really curious as a lot of the thinking is happening and you're doing all the backward design, and I love that. So, you're fully enmeshed in design thinking, because that is the absolute best way to be able to create educational modules. I love that. Thank you for that. But as you're making these types of decisions, kind of along the way, you're learning an awful lot.

**Annalies Corbin:** [00:15:46] And it's not easy to create this new content, and it sounds to me like it hasn't been implemented or deployed quite yet, right? So, will it be deployed? That's one of my questions. And the second piece to that, really, is, as you were going through this process, where were the stumbling blocks for you, right? We'll get to how incredibly wonderful it is, but I also wanted to talk a little bit about celebrating the fact that, A, it wasn't easy. And B, there were some things you had to learn along the way that I would assume were a little bit unexpected as it relates to creating content. So, share with us a little bit about some of those things.

**Grace Benecke:** [00:16:24] Yeah. So, one of the things we also had to think about was what kind of supplies and everything that we were going to be able to deploy or that students would have at home to be able to use. That was one of the major things, because all of the different sections, like our biology section and our chemistry section, had different components to them that we had to think about. Might people have these or might we have to send them out? Things like that. Jessica might be able to speak more about if it's being deployed this year or not.

**Grace Benecke:** [00:16:54] But it was just very interesting, because everybody worked on different parts, like I focus more on the introduction and conclusion, like the bookends of everything, but we did

have students working on the biology section and the chemistry section, and some of those students had to think about the level of what the content was. Like for the chemistry section, for example, we did some flame tests, which is pretty high level for these elementary kids, but they were able to do it in videos so that the students could still get that experience and learn more about it in a way that they would understand it.

**Annalies Corbin:** [00:17:36] Yeah, absolutely. So, Jessica, same question back to you then, as you're working with the students to sort of build out and design, so where do you see? I'm really curious, so the reason I—let's set the stage. The reason I'm asking this question is because there's this common myth that anybody can create content that is standard-aligned and will be super successful with students. I'm a scientist, I'm a research scientist at university or in a lab with this company, and I think that I can create a thing that can go into schools and it will really help kids get engaged or understand what it is that I do.

**Annalies Corbin:** [00:18:12] And if that were the case, that would be wonderful, because there are so many people that are passionate about what they do out there in the world. But the reality is that doesn't always translate into the ability to be plug and play sort of into a school setting, meet all the needs, the level of rigor, plus the interest and the engagement that a school or teacher needs in something that will engage and grab the kids, so that they will consider this thing down the road as an experience that they have. Jessica, it's not as easy as, sometimes, we offhandedly might think that it is. So, how do you help a team of undergrads understand and wrestle with the decision making process as it relates to what's going to make a great module?

**Jessica Caton Diefenbach:** [00:18:54] Yeah. I think any time we have a new unit that we definitely take that more into consideration, because the other units have been going on for so long. This year was definitely a little bit more unique, because it's virtual and the WOW Program is mostly hands-on. And so, how to make it still hands-on with a virtual component? And going back to your kind of question beforehand, you were mentioning when it's going to be implemented, we're hoping this coming semester.

**Jessica Caton Diefenbach:** [00:19:24] We're just kind of working on getting some of the supplies and getting the last minute edits on the videos. But now that the students will actually be in the classroom, we can not only provide some of the supplies, but we can maybe even provide a little bit of input being there, too. But for the most part, it will be a virtual kind of working experiment. Just especially with the beginning of this year, it might be a little unusual, and a little bit-

**Annalies Corbin:** [00:19:52] And might be a little hybrid still from the COVID influences. Right, yeah.

**Jessica Caton Diefenbach:** [00:19:56] Yeah. And so, it wouldn't hurt. And honestly, the program always, we really tried to align with the standards through Ohio. So, the science standards, and just make sure that we're helping with test scores. So, especially with the fifth grade classroom, so we have a light unit, a sound unit, because those are common things that are tested in the curriculum for the fifth graders. And we really do try to kind of align with the standards, but also, we have to do some experiments and units that maybe won't necessarily align, but will give the same concepts of science that will be useful in other disciplines.

**Jessica Caton Diefenbach:** [00:20:40] So, we always start with the scientific method, because the basis of science is the scientific method, and every one of our experiments kind of focuses on that. And even in this unit, they are going through the steps of the scientific method to kind of figure out who ate the Buckeyes. And so, we were not necessarily trying to replace the curriculum, we're just trying to enhance and just kind of make it a little bit better and maybe more engaging, and in a normal year, more hands-on.

**Jessica Caton Diefenbach:** [00:21:10] At the same time, also, we are talking about basic level science and trying to get the kids interested in it, but we're also introducing them to scientists or budding scientists. So, they get to see, oh, if Bri is talking to them and she's a criminology major, if they're interested in this, you can major in this and go into it, and they might have never heard about these majors. And honestly, before working here, some of the majors that my students have, I had never heard of before either. So, there are so many different disciplines and they're really role models to my students.

**Jessica Caton Diefenbach:** [00:21:48] So, it's kind of like a two-fold. So, not only does our program help get students interested in science, and get them excited, and kind of learn some new things, but they also get to be introduced to a scientist, and then the college student gets the experience to, if you can explain a concept like why the sky is blue to a kindergarten student, well, you're going to be great in your career years later, because you can explain a simple concept to somebody who's younger.

**Annalies Corbin:** [00:22:19] Yeah, absolutely, you can, right? And there's no better way to know your topic than to teach it. I tell my students that all the time when their eyes get really big, hey, I want you to come in and do this thing, and they're like, oh, my gosh. But that is the reality. So, Grace, so share with us just a little bit, since this is sort of your capstone work. So, lay out for our listeners the concept or the content. So, I'm a teacher, this module is going to come into it, on one of these three elementaries that the WOW program has adopted for my three years and we're going to do this forensic science unit. What are the components of this unit, sort of as a teacher? So, I just want everybody to understand sort of, what's going to be in this thing?

**Grace Benecke:** [00:23:03] Sure. So, we start out with setting the scene, not the crime scene, but just like the scenario that we set up, where the students were on a field trip, and they all got a box of Buckeye treats, and they made their way to the union to eat them. And then, a girl went to the bathroom or a student went to the bathroom, and when they came back, their Buckeyes had been eaten, and all that was locked.

**Annalies Corbin:** [00:23:31] Oh, no.

**Grace Benecke:** [00:23:31] Yeah, right? All that was left behind was a student's mask. There were some paint smudges and some fingerprints on the Buckeye box. So, now, we lead it to the students to work through the activities that we set up to collect the clues and ultimately put together which student took the Buckeyes. So, they go into the biology activities, which involve more of the fingerprint analysis. They were able to do their own fingerprints, do some fingerprints from the crime scene, learn that fingerprints are unique to everyone, so that's how we can use them to connect clues. And then, we did a little bit further with the biology unit and we did a strawberry DNA analysis, which is a really common activity.

**Annalies Corbin:** [00:24:22] Yeah, that's fun.

**Grace Benecke:** [00:24:22] Yeah, it's one of my favorites, where they are able to extract the strawberry's DNA and get to see that that is what people can take from crime scenes. And then, for the chemistry unit, they did paint chip analysis with the flame test, and that's like, the students walk them through that in a video, more so than that one being something that they did. And then, they also looked at the hair for the chemistry unit, which was very interesting.

**Grace Benecke:** [00:24:53] And then, for the section that Brianna did, which was the interview section, the students give alibis and they give where they were. They tell a little bit about themselves, like if they have peanut allergies, so the students can go through and rule out who it could have been and solidify their answer. And then, they wrap up at the end with choosing who they think did it and why.

**Annalies Corbin:** [00:25:18] And so, Brianna, then how long does it take to do this unit? Is this a day? Is this a week? Can it be broken into a number of different pieces or parts? So, that's part one of my question, because I like to ask complex questions. And so, the part two of my question then is as you were working with the team, building this out, did anything surprise you in terms of the way that you were thinking about, well, could we actually take that concept, translate it in such a way that these little kids, are going to be able to understand this complex science?

**Brianna Agomessou:** [00:25:55] So, yeah, it was definitely a hard time thinking about different topics, like we want to include DNA. You're like, how are we going to show them DNA? So, the strawberry experiment, which everyone has done, and to this day, I love that experiment. It's one of my favorite things I've done in high school. So, from that, it was very helpful. And then, the fingerprints, that was even something that I felt would be really like informational to the children, because I don't think a lot of kids know that everyone has unique prints. So, that was really interesting also.

**Brianna Agomessou:** [00:26:29] And then, just matching the paint, and then the hair. So, when I was going through the interviews and creating like the card, because we made cards with all the kids identities to make it easier for them, it was really a challenge of also making it not too simple for them by saying like, okay, well, this one had a bad alibi, but everything else matches up, because then it would be too quickly like discovered. So, we had to make sure we were going through and we were matching up things. So, I had to go back through all the other units to make sure that I was matching the correct information, and going through, and that everything was correlating.

**Annalies Corbin:** [00:27:05] Absolutely. And so then, do you think, Brianna, that when it's all said and done, so if a kid were to reach out to you, and say, hey, I want to be a forensic scientist, or I want to be an anthropologist, or I want to be a chemist, right? And so, what would you say to that kiddo as sort of a next step? I'm really curious, because programs come into schools all the time, right? We inspire kids, but very few programs actually have a mechanism. It's one of the things I like about the WOW Program when Jessica and I first met and we're talking about it is the fact that you stick with these schools, these teachers, right?

**Annalies Corbin:** [00:27:46] And ultimately, with these kiddos for a three-year period of time. So, it's not a one and done, right? So, how would you, whether it be a teacher that says I've got a kid that's interested in this or even just a kid reaching out to any one of you yourselves, how do you help then a teacher, a student, families, the community keep kids engaged in that thing that they're interested in? So, like what are the low-hanging sort of next steps they could take even outside of the existing program to ensure that kid actually grows up to one day be Brianna and study forensic science or to be Grace and become a chemist, and so on and so forth, or Jessica, who I hear is a bit of a bird nerd. And anybody can answer that question. Yeah. Anybody.

**Brianna Agomessou:** [00:28:33] I just have a small input. So, I was going to say from my perspective of being still a college student, so it's not like I can give them like, well, I work here, you can come visit. But I, during the summer, actually worked with a nonprofit. It's a summer camp. I was a project coordinator. So, this kind of tied into me having to be around children a lot. And a lot of times, they'd ask me like, oh, what do you do? And I would tell them like, I'm in college, and then I told them what I'd do, and they're like, that's cool. How do I do that?

**Brianna Agomessou:** [00:29:02] So, my big advice to children and like students would be, do research, and I know that sounds like a big word to them. So, they're like, what's that? And I'm like, Google, you guys are always on your phone, like the campers were always on their phones, and like doing simple research, and reading a book, and all these different things will be a good setup for you. And they're like talking to parents and explaining to them, there are a lot of different resources even online or just doing a quick search. There are many things that you can do. So, just from my perspective, that's what I-

**Jessica Caton Diefenbach:** [00:29:33] And yes, so kind of adding on to that, so, Annalis, you actually mentioned how long this unit should be. Usually, our units are, we have like one visit in the classroom for 45 to an hour, so this is obviously much longer than that. I would say if the teacher is able to kind of implement it, maybe an experiment or two a week, so maybe within a month period, they can figure out kind of who did it, would be probably the best timeline.

**Jessica Caton Diefenbach:** [00:30:07] I mean, if they wanted to do it all in one day, that would be great, but it will also depend on if the teachers have that amount of time to kind of devote to it. But what we do for our programs, and especially for our new ones, is we try to do pre and post-survey questions to see if we can really help the teachers out. And so, we actually did a pre-survey question for some of our teachers.

**Jessica Caton Diefenbach:** [00:30:31] We didn't hear back from everybody, but we did kind of ask the teachers to ask their students, what did they think about forensic science? When they hear the term, a forensic scientist, what do they think of? And exactly what the students replied is what we were expecting, were the misconceptions that Sherlock Holmes, Inspector Gadget, that is a forensic scientist, and you, or I, or any of these people could actually become a forensic science, they didn't think about that.

**Jessica Caton Diefenbach:** [00:31:02] It was only somebody in the media or CSI. So, we're taking that and we have a misconception section that kind of addresses it for the kids. And then, we actually made sure to add Bri and Grace. We have forensics detectives cards of actual forensic scientists that are out there, and this is what they majored in, and this is where you can work.

**Jessica Caton Diefenbach:** [00:31:30] So, with our post-survey questions, we hope that if students are engaged and interested, we can potentially connect them. We started during the pandemic a meet and greet, where we had our CAS and Battelle scientists kind of a Zoom in or Google meet into a classroom and just talk about their career. And they got asked very interesting questions that had nothing to do with their career.

**Annalies Corbin:** [00:31:54] Of course, they have. That's what little kids to do. That's the best part, yeah.

**Jessica Caton Diefenbach:** [00:31:58] Exactly. It was, what's your favorite video game? Like not, what were the classes that you had to excel at to go into this career? And so, we would really like to actually interview forensic scientists, anthropologists, and have them talk to the students after to answer those maybe questions that we couldn't answer in our unit. So, we always try with our teachers, we leave them not only with the lesson plans that they can do this experiment, again, we're hoping to also provide a little bit of supplies to, but then also connections to OSU faculty and staff, and to other organizations.

**Jessica Caton Diefenbach:** [00:32:39] So, if these students are interested and want to continue their learning, then they can. So, it just doesn't have to be, okay, we talked about this unit, and three or four months later, we can't talk about it again. We would love to kind of keep the conversation going, especially because it is an interesting topic that focuses on so many different units, or sorry, different science disciplines.

**Annalies Corbin:** [00:33:05] Yeah, absolutely. And I love the fact that you're thinking about, what's the next iteration of all of these opportunities for all of these kiddos? Grace, I always like to sort of leave the program with recognizing the fact that there are folks out in the world that are listening to this that don't have access necessarily to WOW. They're not in our local Columbus community, right? And again, I'll toss this sort of out, but I always like to leave, folks, recognizing that somebody's listening to this, and saying, hey, I think maybe I could do that.

**Annalies Corbin:** [00:33:38] So, Grace, if there is a budding teacher out there that says, hey, that's a really, really cool thing, I'm interested, for example, in chemistry, thinking about what you're studying in your background, and I want to do some simple things in my classroom, what did you learn through this process that would allow you as a chemist to say to a teacher that you could support or was even from afar, hey, do these couple of things? What was that sort of aha low-hanging fruit moment for you that you learned through this process?

**Grace Benecke:** [00:34:08] Yeah. I would say that it's actually a lot more attainable than you would think it would be. It does require a lot of work, but the outcome is definitely worth putting in that time. There's a lot of ways that you can take something like forensic science and bring it down to a level for the kids to experience it in a real like forensic science way for them to explore and get good experience with some introductory level topics like fingerprinting that people do use every day in the real world. There are a lot of activities that you could go a million different places with, but it definitely just does take some time.

**Annalies Corbin:** [00:34:56] Yeah, absolutely. Same question to you, Brianna, so that teacher's out there saying, hey, I want to do this. What's the first thing that you would tell them to do, that low-hanging fruit from your experience here?

**Brianna Agomessou:** [00:35:07] I definitely would say, basically, where I started to even get the interviews going is Googling it. That's a big help, and I'm glad that we live in a time where we do have such resources at our fingertips that it was simple to like say, okay, I need a starter, let me Google elementary science things, which there's not that many of, because forensic science isn't really taught to elementary kids, because they typically think it's for like middle school and high school, because it's more complex.

**Brianna Agomessou:** [00:35:38] But definitely, just trying to find the resources online and trying, like Grace said, to take some time just to convert it into something that your student would genuinely be interested in, because it is a very, very interesting topic, but I think elementary kids will, I pray and I hope that what we did, they will love it. And so, I think that anyone technically can do it, you just have to put in the time and the effort, and just go online and find it.

**Annalies Corbin:** [00:36:05] Yeah, absolutely. So, Jessica, just sort of close out with you then. So, I'm a teacher in Utah, or Nevada, or West Virginia, and I love what I just heard. Is there opportunity for me to get access to any of the WOW content from afar?

**Jessica Caton Diefenbach:** [00:36:24] Yes. So, probably not the forensics unit just yet, because we're still kind of in the development process, but over the pandemic, we actually introduced a WOW at home program, where we added a lot of our experiments and some new ones so that the lesson plan is on our website. So, [wow.osu.edu](http://wow.osu.edu). And you can actually not only see the lesson plan, the supplies, we maybe have questions or an activity guide to go along with it.

**Jessica Caton Diefenbach:** [00:36:55] And there are a variety of different areas, so there are about 21 different experiments. So, that would be probably the first step, and then we also have a contact sheet if you're interested. We have given out a lot of our curriculum to teachers in other countries, in other states, even here in Ohio, maybe not necessarily at an elementary school, maybe if it was ice breaker-type kind of activities to get a kid or maybe even college students interested in science, a variety of things that we can offer.

**Jessica Caton Diefenbach:** [00:37:32] So, if they are interested, we can just fill up the contact sheet on the website and know that we're not trying to reinvent the wheel. So, as Bri mentioned, we do go online first to kind of look up our things, and yes, the forensics unit was a bit of kind of piecing together things that had been done and maybe simplifying it to make it more grade-appropriate.

**Jessica Caton Diefenbach:** [00:37:59] But all of our activities either have been done or kind of adapted to fit our program, but we do have some unique individual opportunities, but we really just want to try to focus on getting students interested in science and doing hands-on activities. So, if the teacher is interested, that's great. That's actually the first step, because that's why our program exists. We want the teachers to not be nervous about talking about science and finding out that science is in everything we talk about.

**Jessica Caton Diefenbach:** [00:38:38] They can incorporate science in reading and math, so it doesn't have to be just a science unit. So, hopefully, we're here to help in any way and provide some activities, or even just point you in the right direction, or make a connection through the university, because there's a lot of faculty here at OSU that also want to provide help and input. We work with the Greenhouse, and I've worked with the Astronomy Department, and a few different departments to provide supplies to the schools as well.

**Annalies Corbin:** [00:39:09] Yeah, that's wonderful. Thank you very much for that. And so, we will make sure, definitely, on the program that we include all the links so that folks can get to that. So, ladies, I want to thank you so much both for taking time out of your day to have a conversation with us and for all the hard work that you've put into the amazing WOW, Wonders of Our World, Program. So, thank you very much.

**Jessica Caton Diefenbach:** [00:39:31] Thank you.

**Grace Benecke:** [00:39:32] Thank you for having us.

**Jessica Caton Diefenbach:** [00:39:34] Couldn't do it without our students, so thank you, guys. Thank you for having us, too. We really appreciate talking about this. And if anybody's interested, also following on our social media for WOW Program OSU as well.

**Annalies Corbin:** [00:39:48] Yeah, we will make sure that we send out all of those links, so thank you so much, ladies.

**Jessica Caton Diefenbach:** [00:39:54] Alright. Thank you.

**Grace Benecke:** [00:39:55] Thank you.

**Annalies Corbin:** [00:40:00] Thank you for joining us for Learning Unboxed, a conversation about teaching, learning, and the future of work. I want to thank my guests and encourage you all to be part of the conversation. Meet me on social media @AnnaliesCorbin, and join me next time as we stand up, step back, and lean in to reimagine education.